

**Amendments to the Claims:**

*This listing of claims replaces all prior versions, and listings, of claims in the application:*

1. (CURRENTLY AMENDED) A vehicle-based programmable appliance control system comprising:

a vehicle-based data communication bus running throughout at least a portion of a vehicle;

at least one user activation input connected by a first bus interface to the communication bus;

~~a bus interface transmitting an activation input signal over the data communication bus based on assertion of the at least one user activation input;~~

a radio frequency transmitter remotely located from the at least one user activation input and connected by a second bus interface to the communication bus; and

control logic connected by a third bus interface to the communication bus; ~~in communication with the at least one user activation input and the transmitter, the control logic operative to generate control signals for transmitting an appliance activation signal based on receiving transmission of the activation input signal~~

wherein upon being asserted the at least one user activation input provides an activation input signal to the communication bus for receipt by the control logic;

wherein the control logic receives the activation input signal from the communication bus, generates control signals corresponding to the activation input signal, and provides the control signals to the communication bus for receipt by the transmitter;

wherein the transmitter receives the control signals from the communication bus, generates a radio frequency appliance activation signal in accordance with the control signals, and transmits the appliance activation signal for receipt by an appliance.

2. (ORIGINAL) The system of claim 1 further comprising at least one user indicator remotely located from the transmitter, the control logic further operative to activate the user indicator over the data communication bus.

3. (ORIGINAL) The system of claim 2 wherein the user indicator is at least one indicator lamp.

4. (ORIGINAL) The system of claim 2 wherein the user indicator is a graphical display.

5. (ORIGINAL) The system of claim 2 wherein the user indicator generates an audible sound.

6. (ORIGINAL) The system of claim 1 wherein the at least one activation input comprises a plurality of switches.

7. (ORIGINAL) The system of claim 1 wherein the at least one activation input comprises a voice recognizer.

8. (ORIGINAL) The system of claim 1 wherein the at least one activation input comprises at least one display control.

9. (ORIGINAL) The system of claim 1 further comprising a memory in communication with the control logic, the memory holding a plurality of activation schemes, each activation scheme providing characteristics for generating at least one appliance activation signal.

10. (ORIGINAL) The system of claim 9 further comprising a data port in communication with the control logic over the data communication bus, the control logic operative to receive data from the data port modifying the plurality of activation schemes.

11. (CURRENTLY AMENDED) A method of activating a remotely controlled appliance comprising:

generating an activation input signal at an activation input located in a vehicle and connected to a vehicle-based communication bus running throughout the vehicle upon assertion of the~~receiving an~~ activation input from by a user;

transmitting ~~an input signal representing~~ the activation input signal through a ~~vehicle-based~~ the communication bus;

receiving the activation input signal from the ~~vehicle-based~~ communication bus at a location in the vehicle remote from ~~where~~ the activation input ~~was received~~; and

transmitting a radio frequency activation signal based on the received activation input signal from a location in the vehicle remote from the activation input.

12. (CURRENTLY AMENDED) A method of programming a vehicle-based remote control, the remote control operative to transmit at least one activation signal for activating a remotely controlled appliance, the method comprising:

generating at least one programming signal at a~~receiving at least one~~ programming input located in a vehicle and connected to a vehicle-based communication bus running throughout the vehicle upon assertion of the programming input from by a user, the at least one programming input signal specifying at least one of a plurality of activation signal characteristics;

transmitting the at least one programming signal ~~representing the at least one~~ programming input through a ~~vehicle-based~~ the communication bus;

receiving the at least one programming signal from the ~~vehicle-based~~ communication bus at a location in the vehicle remote from ~~where~~ the ~~at least one~~ programming input ~~was received~~; and

transmitting a radio frequency activation signal based on the received at least one programming signal from a location in the vehicle remote from the programming input.

13. (ORIGINAL) The method of claim 12 wherein the at least one programming input comprises a fixed code value.

14. (ORIGINAL) The method of claim 12 wherein the at least one programming input comprises a selection of one of a plurality of activation transmission schemes.

15. (ORIGINAL) The method of claim 12 wherein the at least one programming input comprises an indication of whether the remotely controlled appliance is responsive to a fixed code activation signal or to a rolling code activation signal.

16. (CURRENTLY AMENDED) A vehicle-based remote garage door opener comprising

a vehicle-based bus running throughout at least a portion of an automotive vehicle;

at least one user input device in communication with the vehicle-based bus;

a radio frequency transmitter in communication with the vehicle-based bus and operative to transmit at least one of a plurality of different activation signals; and

control logic in communication with the vehicle-based bus ~~and the transmitter~~, the control logic remotely located from the at least one user input device, the control logic commanding the transmitter over the vehicle-based bus to transmit at least one activation signal based on input received by the control logic over the vehicle-based bus from the at least one user input device.

17. (ORIGINAL) The vehicle-based remote garage door opener of claim 16 wherein the at least one user input device is a plurality of switches, each of which provides an activation input.

18. (ORIGINAL) The vehicle-based remote garage door opener of claim 16 wherein the control logic receives a fixed code value from the at least one user input device.

19. (ORIGINAL) The vehicle-based remote garage door opener of claim 16 wherein the control logic receives a selection signal from the at least one user input device,

the selection signal selecting at least one of a plurality of possible activation signal transmission schemes.

20. (ORIGINAL) The vehicle-based remote garage door opener of claim 19 wherein the control logic receive the selection signal in response to at least one test activation signal sent by the transmitter.

21. (ORIGINAL) The vehicle-based remote garage door opener of claim 16 further comprising a memory storing a plurality of activation signal transmission schemes.

22. (ORIGINAL) The vehicle-based remote garage door opener of claim 21 further comprising a data port in communication with the vehicle-based bus, the data port receiving changes to the plurality of activation signal transmission schemes and forwarding the received changes to the memory.

23. (ORIGINAL) The vehicle-based remote garage door opener of claim 16 further comprising at least one user output device in communication with the vehicle-based bus.

24. (ORIGINAL) A programmable control for an appliance, the appliance responding to one of a plurality of transmission schemes, the programmable control comprising:

a serial data communication bus;

a transmitter operative to transmit a radio frequency activation signal based on any of the plurality of transmission schemes;

a user programming input; and

control logic in communication with the user programming input through the serial data communication bus, the control logic implementing a rolling code programming mode, a fixed code programming mode and an operating mode, the control logic in rolling code programming mode generating and transmitting a sequence of rolling code activation

signals until user input indicates a successful rolling code transmission scheme, the control logic in fixed code programming mode receiving a fixed code from the user programming input then generating and transmitting a sequence of fixed code activation signals until user input indicates a successful fixed code transmission scheme.

25. (CURRENTLY AMENDED) A programmable control for an appliance, the appliance responding to one of a plurality of transmission schemes, the programmable control comprising:

- a serial data communication bus running throughout a vehicle;
- a transmitter in communication with the communication bus and operative to transmit a radio frequency activation signal;
- a programming input in communication with the communication bus;
- memory in communication with the communication bus and holding data describing a plurality of rolling code transmission schemes associated with a rolling code mode and a plurality of fixed code transmission schemes, at least one fixed code transmission scheme associated with each of at least one fixed code mode; and
- control logic in communication with the ~~programming input over the serial data~~ communication bus, for each of at least one channel the control logic maintaining a channel mode set initially to the rolling code mode, the channel mode changing to one of the at least one fixed code mode if the channel is trained to a fixed code received by the control logic over the communication bus from the programming input.

26. (CURRENTLY AMENDED) A programmable control for an appliance, the appliance responding to one of a plurality of transmission schemes, the programmable control comprising:

- a serial data communication bus running throughout a vehicle;
- a transmitter in communication with the serial data communication bus and operative to transmit a radio frequency activation signal;
- a plurality of activation inputs in communication with the serial data communication bus, each generating an activation signal when asserted;

memory in communication with the serial data communication bus and holding data describing each of the plurality of transmission schemes; and

control logic in communication with the ~~activation inputs over the serial data~~ communication bus, the control logic programmed to associate each of the plurality of activation inputs with at least one of the plurality of transmissions schemes, the control logic generating and transmitting an activation signal based on each of the at least one associated transmission scheme in response to receiving an activation signal from an asserted activation input over the serial data communication bus.